

WHAT IS CLAIMED IS:

1. A method for filtering messages communicated between a cable head end and one or more cable modems, the method comprising:

selecting message filtering criteria;

5 receiving a message at the cable head end from a cable modem or a message that is to be transmitted to a cable modem; and

when the received message meets the filtering criteria, copying the received message and sending the copied message to a memory device.

2. A method as recited in claim 1, further comprising:

10 when the received message is to be transmitted to a cable modem, forwarding the received message to the cable modem; and

when the received message is from a cable modem, processing the received message at the cable head end.

3. A method as recited in claim 1, wherein the filtering criteria specifies a message type and the received message meets the filtering criteria when the received message has the specified message type.

4. A method as recited in claim 3, wherein the message type is a MAP message.

5. A method as recited in claim 4, wherein the filtering criteria further specifies one or more service identifiers and the filtering criteria is met when the received message is a MAP message that contains any specified service identifier.

6. A method as recited in claim 4, wherein the filtering criteria further specifies one or more MAC addresses and the filtering criteria is met when the received message is a MAP message that contains any specified MAC address.

7. A method as recited in claim 4, wherein the filtering criteria further includes
5 an option to append a time stamp to the copied message.

8. A method as recited in claim 4, wherein the filtering criteria further includes an option to strip a MAC Management Header from the copied message.

9. A method as recited in claim 3, wherein the message type is a dynamic service message.

10. A method as recited in claim 9, wherein the filtering criteria further specifies one or more service identifiers and the filtering criteria is met when the received message is a dynamic service message that contains any specified service identifier.

11. A method as recited in claim 9, wherein the filtering criteria further specifies a dynamic service message type and the filtering criteria is met when the received message is
15 a dynamic service message that contains the specified dynamic service message type.

12. A method as recited in claim 11, wherein the dynamic service message type is selected from a group consisting of a message for adding, a message for deleting, and a message for changing one or more services.

13. A method as recited in claim 9, wherein the filtering criteria further includes
20 an option to append a time stamp to the copied message.

14. A method as recited in claim 9, wherein the filtering criteria further includes an option to strip a MAC Management Header from the copied message.

15. A method as recited in claim 1, wherein the filtering criteria specifies one or more service identifiers and the filtering criteria is met when the received message contains any specified service identifier.

16. A method as recited in claim 1, wherein the filtering criteria specifies one or more MAC addresses and the filtering criteria is met when the received message contains any specified MAC address.

17. A method as recited in claim 1, wherein the filtering criteria specifies one or more access control type parameters and the filtering criteria is met when the received message contains any specified access control type parameter.

18. A method as recited in claim 1, wherein the filtering criteria specifies either a downstream or downstream direction and the filtering criteria is met when the received message is associated with the specified direction.

19. A method as recited in claim 1, wherein the filtering criteria specifies one or more ports and the filtering criteria is met when the received message is associated with any specified port.

20. A method as recited in claim 1, wherein the memory device forms part of a computer system that is accessible via a computer network.

21. A computer system operable to filter messages communicated between a cable head end and one or more cable modems, the computer system comprising:

one or more processors;

one or more memory, wherein at least one of the processors and memory are adapted to:

select message filtering criteria;

receive a message at the cable head end from a cable modem or a message that is to be transmitted to a cable modem; and

when the received message meets the filtering criteria, copy the received message and send the copied message to a memory device

22. A computer system as recited in claim 21 in the form of a Cable Modem Termination System (CMTS).

23. A computer system as recited in claim 21, wherein at least one of the processors and memory are further adapted to:

when the received message is to be transmitted to a cable modem, forward the received message to the cable modem; and

when the received message is from a cable modem, process the received message at the cable head end.

24. A computer system as recited in claim 21, wherein the filtering criteria specifies a message type and the received message meets the filtering criteria when the received message has the specified message type.

25. A computer system as recited in claim 24, wherein the message type is a MAP message.

26. A computer system as recited in claim 25, wherein the filtering criteria further specifies one or more service identifiers and the filtering criteria is met when the received message is a MAP message that contains any specified service identifier.

27. A computer system as recited in claim 25, wherein the filtering criteria further specifies one or more MAC addresses and the filtering criteria is met when the received message is a MAP message that contains any specified MAC address.

28. A computer system as recited in claim 25, wherein the filtering criteria further includes an option to append a time stamp to the copied message.

29. A computer system as recited in claim 25, wherein the filtering criteria further includes an option to strip a MAC Management Header from the copied message.

30. A computer system as recited in claim 24, wherein the message type is a dynamic service message.

31. A computer system as recited in claim 30, wherein the filtering criteria further specifies one or more service identifiers and the filtering criteria is met when the received message is a dynamic service message that contains any specified service identifier.

32. A computer system as recited in claim 30, wherein the filtering criteria further specifies a dynamic service message type and the filtering criteria is met when the received

message is a dynamic service message that contains the specified dynamic service message type.

33. A computer system as recited in claim 32, wherein the dynamic service message type is selected from a group consisting of a message for adding, a message for deleting, and a message for changing one or more services.

34. A computer system as recited in claim 30, wherein the filtering criteria further includes an option to append a time stamp to the copied message.

35. A computer system as recited in claim 30, wherein the filtering criteria further includes an option to strip a MAC Management Header from the copied message.

36. A computer system as recited in claim 21, wherein the filtering criteria specifies one or more service identifiers and the filtering criteria is met when the received message contains any specified service identifier.

37. A computer system as recited in claim 21, wherein the filtering criteria specifies one or more MAC addresses and the filtering criteria is met when the received message contains any specified MAC address.

38. A computer system as recited in claim 21, wherein the filtering criteria specifies one or more access control type parameters and the filtering criteria is met when the received message contains any specified access control type parameter.

39. A computer system as recited in claim 21, wherein the filtering criteria specifies either a downstream or downstream direction and the filtering criteria is met when the received message is associated with the specified direction.

40. A computer system as recited in claim 21, wherein the filtering criteria specifies one or more ports and the filtering criteria is met when the received message is associated with any specified port.

41. A computer system as recited in claim 21, wherein the memory device forms part of a second computer system that is separate from the first computer system and that is accessible via a computer network.

42. A computer program product for filtering messages communicated between a cable head end and one or more cable modems, the computer program product comprising:

at least one computer readable medium;

computer program instructions stored within the at least one computer readable product configured to cause a computer system to:

select message filtering criteria;

receive a message at the cable head end from a cable modem or a message that is to be transmitted to a cable modem; and

when the received message meets the filtering criteria, copy the received message and send the copied message to a memory device.

43. A computer program product as recited in claim 42, wherein the filtering criteria specifies a message type and the received message meets the filtering criteria when the received message has the specified message type.

44. A computer program product as recited in claim 43, wherein the message type is a MAP message.

45. A computer program product as recited in claim 44, wherein the filtering criteria further includes an option to append a time stamp to the copied message.

5 46. A computer program product as recited in claim 44, wherein the filtering criteria further includes an option to strip a MAC Management Header from the copied message.

47. A computer program product as recited in claim 43, wherein the message type is a dynamic service message.

10 48. A computer program product as recited in claim 42, wherein the filtering criteria specifies one or more service identifiers and the filtering criteria is met when the received message contains any specified service identifier.

15 49. A computer program product as recited in claim 42, wherein the filtering criteria specifies one or more MAC addresses and the filtering criteria is met when the received message contains any specified MAC address.

50. A computer program product as recited in claim 42, wherein the filtering criteria specifies one or more access control type parameters and the filtering criteria is met when the received message contains any specified access control type parameter.

51. A computer program product as recited in claim 42, wherein the filtering criteria specifies either a downstream or downstream direction and the filtering criteria is met when the received message is associated with the specified direction.

52. A computer program product as recited in claim 42, wherein the filtering
5 criteria specifies one or more ports and the filtering criteria is met when the received message is associated with any specified port.

53. A computer program product as recited in claim 42, wherein the memory device forms part of a computer system that is accessible via a computer network.

54. An apparatus for filtering messages communicated between a cable head end
10 and one or more cable modems, the apparatus comprising:

means for selecting message filtering criteria;

means for receiving a message at the cable head end from a cable modem or a message that is to be transmitted to a cable modem; and

means for copying the received message and sending the copied message to a
15 memory device when the received message meets the filtering criteria.